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CE/CME Parent-Adolescent Violence and Later Behavioral Health Problems Among Homeless and Housed Youth

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Parent-adolescent violence (i.e., violence between parents and adolescents) is an important pathway to homelessness and predicts poor behavioral health outcomes among youth. However, few studies have examined links between parent violence and outcomes among youth who are homeless. Existing research has also tended to ignore adolescent violence toward parents, despite evidence that mutual violence is common. The current study examines prospective links of parent-adolescent violence to outcomes among youth who were homeless and demographically matched youth, through two complementary substudies: (a) an exploratory factor analysis (EFA) of items measuring parent and adolescent violence combined in the same analysis; and (b) an examination of predictive relationships between the factors identified in the EFA and behavioral health problems, including mental health and alcohol abuse problems. Predictive relationships were examined in the overall sample and by gender, ethnic, and housing status subgroups. Results of the EFA suggested that parent-adolescent violence includes intraindividual (i.e., separate parent and adolescent) physical components and a shared psychological component. Each of these components contributed uniquely to predicting later youth behavioral health. Implications for research and practice with youth who are homeless are discussed.

Keywords: adolescent homelessness, physical abuse, emotional abuse, adolescent psychopathology, adolescent substance abuse

Many studies have documented the adverse outcomes of parent violence toward children. For example, there is considerable evidence that parent violence is associated with the development of later psychological symptoms among youth during childhood, adolescence, and adulthood (Kaplan, Pelcovitz, & Labruna, 1999; Repetti, Taylor, & Seeman, 2002). Similarly, research has implicated parent violence toward youth in the development of later alcohol or other substance abuse problems (Fergusson, Boden, & Horwood, 2008; Kaplan et al., 1998; Moran, Vuchinich, & Hall, 2004). Some studies have also shown that psychological violence—verbal or nonverbal acts that convey physical threat, demean, or otherwise cause nonphysical harm—contributes to negative outcomes, even where effects of physical violence are controlled (Garrison, 1987; Vissing, Straus, Gelles, & Harrop, 1991). Parent violence is commonly cited by youth who are homeless as the cause of their leaving home and contributes to their risk of developing behavioral health issues (Robertson, 1989). Across studies, rates of parent physical violence among adolescents who are homeless range from approximately 15 to 60% (Haber & Toro, 2004). Although these rates range widely, because of varying methodological approaches, even the lowest exceeds those found in community samples of housed youth of between 2 and 12% (Boney-McCoy & Finkelhor, 1995; Straus & Gelles, 1986).

One mechanism through which parent violence may increase poor outcomes is by leading to traumatic events or other experiences that further compound youth risk (Lynch & Cichetti, 1998). Recent research suggests that experiences on the streets, in shelters, or other homeless settings may heighten risk in this way among youth who are homeless, a process referred to as "risk amplification" (Whitbeck, Hoyt, & Yoder, 1999). The contention that homelessness compounds risk is supported by the high prevalence rates of risky behavior, victimization outside the family, and poor behavioral health outcomes in samples of youth who are homeless. For example, rates of extrafamilial victimization among youth who are homeless (e.g., robbery, physical victimization, rape) have been found to be several times higher than among other youth, and their rates of alcohol and substance abuse also exceed those of their peers (e.g., Boesky, Toro, & Bukowski, 1997; Windle, 1989; Yates, MacKenzie, Pennbridge, & Cohen, 1988). As with rates of parent violence, these rates vary widely, in part because of the type of sample involved. Youth on the streets tend to have more extensive histories of homelessness, more significant histories of violent victimization and other trauma, and more severe behavioral health problems (Haber & Toro, 2004; Robertson & Toro, 1999). By contrast, youth in shelter settings tend to have less severe problems and are often homeless only for short

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periods. For example, in their shelter sample, McCaskill, Toro, and Wolfe (1998), found that most (86%) youth had been homeless for less than 1 month.

Although many studies have examined parent violence toward youth in general, relatively few have focused on parent violence toward adolescents. Parent violence toward adolescents often begins during preadolescent years, but many cases of adolescent-onset parent violence also exist, and each of these patterns may have different prognostic significance than a "childhood only" pattern (Thornberry, Ireland, & Smith, 2001). In studies that have focused on parent violence toward adolescents, usually only the most severe forms of violence are considered. Furthermore, in most cases, these studies have been cross-sectional or retrospective, have not controlled for related family environment factors, and have neglected to consider possible subgroup differences by gender and ethnic identification in how parent-adolescent violence may predict later outcomes. In addition, most of this research has considered only parent-adolescent violence toward the adolescent. However, there is ample evidence that adolescent violence toward parents also occurs (Paulson, Coombs, & Landsverk, 1990; Ulman & Straus, 2003), and that parent and adolescent violence within the dyad are related (Brezina, 1999; Browne & Hamilton, 1998; Ullman & Straus, 2003). Relatively few studies have examined how experiences of homelessness may amplify risks because of parent-adolescent violence (Whitbeck & Hoyt, 1999).

Intrafamilial and Extrafamilial Contexts of Parent Violence

In addition to higher rates of parent violence, adolescents who are homeless report poorer parenting and family environments than their housed peers (Wolfe, Toro, & McCaskill, 1999). In community or clinical samples of housed youth, much research has shown how parent violence frequently occurs in a context of poor parenting and family dysfunction, and how it can be driven by these factors (Haskett, Scott, & Ward, 2004). This widely accepted premise is reflected in many interventions to improve parenting skills or rectify dysfunctional family dynamics (Kolko & Swenson, 2002). Some of the specific parenting and family environment factors linked to parent violence include parent or family punitiveness, supportiveness, warmth, and disorganization (Gabarino, Bradshaw, & Kostelny, 2005; Wolfe, 1985).

Paradise and Cauce (2002) suggested that the poorer parenting, poorer family environment, and greater violence found among adolescents who are homeless all stem from a common process of "familial disintegration" that begins in early childhood, long before first episodes of youth homelessness occur. It is important to note, however, that among general samples of youth, parent violence often occurs independently of other intrafamilial risks (Haskett et al., 2004; Oldershaw, Walters, & Hall, 1989). In these cases, parent violence may be precipitated by influences outside of the family system. These may include extrafamilial risks such as poverty or a lack of extrafamilial protective factors such as extended family support or neighborhood sense of community (Melton, Thompson, & Small, 2002). Many of these extrafamilial disadvantages also distinguish youth who are homeless from their peers (Haber & Toro, 2004). Thus, the higher rates of parent violence experienced by homeless youth may stem from extrafamilial as well as intrafamilial sources.

Prior Research on Parent Violence Toward Adolescents

Behavioral health outcomes associated with parent violence toward adolescents resemble those linked to parent violence toward younger children or toward offspring generally (e.g., internalizing and externalizing symptoms, psychological disorders such as depression and posttraumatic stress disorder, and alcohol or other substance abuse problems during adolescence and young adulthood; Council on Scientific Affairs, American Medical Association [AMA], 1993). Significant weaknesses characterize the bulk of the small literature on parent violence toward adolescents and even smaller literature on parent violence toward adolescents who are homeless. Although a few longitudinal studies of the impact of parent violence on adolescents exist (Smith, Ireland, & Thornberry, 2005), studies among adolescents who are homeless are lacking. Existing research has also tended to focus on relatively severe physical violence, such as violence causing injury or substantiated as abuse by protective services (e.g., Kaplan et al., 1998; Thornberry et al., 2001; Straus & Kantor, 1994). Studies examining less severe physical violence (e.g., noninjurious physical violence) or psychological violence (e.g., insults or threats) have suggested that these types of violence may have qualitatively similar prognostic significance (e.g., Caples & Barrera, 2006; Kahn & Fua, 1995; Simons, Ames, Johnson, & Conger, 1994). In some cases, psychological violence has been a relatively stronger predictor than physical violence (Garrison, 1987; Vissing et al., 1991). Despite this, examination of the full range of possible physical and psychologically violent acts in the same study has been uncommon (Kaplan et al., 1999). Additionally, most existing studies do not control for other aspects of parenting and family environment that, as discussed above, tend to be highly associated with violence and predictive of similar outcomes. Risk related to family violence has been shown to be weakened or even erased in some studies that have controlled for other parenting and family environment factors (Gover, 2002; Higgins & McCabe, 1994; Ryan, Kilmer, Cauce, Watanabe, & Hoyt, 2000; Wolfe & Mosk, 1983). Thus, additional research is needed to clarify whether parent-adolescent violence uniquely contributes to risk and therefore merits specialized intervention strategies.

Existing research has suggested that parent violence may predict behavioral health outcomes differently across gender and ethnic subgroups. Some studies have suggested that links involving parent violence and outcomes may be specific to or stronger among females (Horowitz, Widom, McLaughlin, & White, 2001; Hyman, Garcia, & Sinha, 2006). Although studies are lacking on whether ethnicity moderates effects of parent violence per se, some research has found that ethnicity moderates effects of physical punishment. For example, Lansford, Deater-Deckard, Dodge, Bates, and Petit (2004), found that physical punishment was a risk factor among White youth but a protective factor among Black youth. Adolescent violence may present a greater risk for Black than White youth if it undermines parental authority, because parental control has been shown to be important for Black youth, particularly those living in high-risk neighborhoods (Gonzales, Cauce, Friedman, & Mason, 1996; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994).

Prior Research on Adolescent Violence Toward Parents and Violent Adolescent-Parent Dyads

Perhaps the most important factor distinguishing parent-adolescent violence from parent violence toward younger children is the ability of adolescents to reciprocate or initiate violence (AMA, 1993). Although prevalence estimates for adolescent violence are generally lower than those found for parent violence, adolescent violence is still common among adolescents in community samples. Rates range between 7% and 20% for reporting periods of 1 to 3 prior years (e.g., Agnew & Huguley, 1989; Cornell & Gelles, 1982; Brezina, 1999; Straus & Gelles, 1990; Ulman & Straus, 2003). Links between adolescent violence toward parents and later outcomes have seldom been studied, but there are various reasons to suspect that such relationships might exist. For example, other youth violence (i.e., toward peers) has been linked to later poor outcomes among violent youth, such as increased substance abuse (Elliott, Huizinga, & Menard, 1989; White, Loeber, Stouthamer-Loeber, & Farrington, 1999). Adolescent violence toward parents might similarly be expected to be an early indicator of poor outcome trajectories. As suggested by "cascade" models proposed by authors such as Patterson (1996), such aggression could also contribute to poor outcomes by provoking less effective parenting behavior or parent physical and psychological violence. Additionally, adolescents who engage in violence toward parents have been shown to be more prone to violence in other relationship contexts such as with romantic partners (O'Leary, Malone, & Tiree, 1994).

Estimates of the association between parent violence and adolescent violence (e.g., frequency counts of parent and adolescent violent acts) across dyads vary, but, the majority fall in the $r = .2$ to .4 range (e.g., Hartz, 1995; Kratcoski, 1984; Peek, Fischer, & Kidwell, 1985; Ullman & Straus, 2003). These correlations suggest that parent and adolescent violence co-occurs to a substantial extent, in similar manner to violent behaviors in romantic partner dyads (e.g., O'Leary et al., 1989). These data also suggest that, consistent with a systemic approach to understanding family violence (e.g., O'Leary, 1989), certain types of parent-adolescent violent behavior may be dyadic in nature. Prior research on family conflict has shown that violence can be measured on the level of the family dyad or microsystem (e.g., Caples & Barrera, 2006). However, it is unclear the extent to which violent behavior might be better measured on the individual versus the dyadic or microsystem level.

Parent-Adolescent Violence and Outcomes Among Adolescents Who Are Homeless

Many adolescents who are homeless "on their own" identify parent violence as their motive for leaving home (Robertson, 1989). As reviewed earlier, these adolescents experience higher rates of violence from their parents than housed youth. In addition, adolescents who are homeless are at higher risk for outcomes associated with parent-adolescent violence, including internalizing problems (e.g., depression, anxiety), externalizing problems (e.g., conduct disorder), and alcohol abuse (Cauce et al., 2000; McCaskill et al., 1998). Despite the higher prevalence of both violence and poor behavioral health outcomes among youth who are homeless, few studies consider the ways in which violence, homelessness, and poor outcomes might be linked in this group.

In the limited research examining links between parent-adolescent violence, homelessness, and outcomes, the *risk amplification model* (RAM), initially proposed by Whitbeck and Hoyt (1999), has been the leading theoretical framework. According to the RAM, youths' homelessness strengthens the link between exposure to parent violence or other family environment risk factors and subsequent poor outcomes. The RAM posits that the more adverse the supervised adult environment, the more likely it is that youth will be driven to homelessness (either by choice or because of being "kicked out), and in turn, have experiences that negatively affect their behavioral health. Each episode of homelessness or related adverse event is thought to further increase the likelihood of future episodes of homelessness and adverse experiences. Consistent with this idea, youth who are homeless report increased risky behaviors and experiences during and following episodes of homelessness, including subsistence-related illegal behavior (e.g., stealing, prostitution), association with deviant networks, and sexual or physical victimization (e.g., McMorris, Tyler, Whitbeck, & Hoyt, 2002; Whitbeck, Hoyt, & Bao, 2000). Youth who were victimized at home because of becoming homeless experience more of these events—in particular, physical or sexual victimization (Whitbeck & Hoyt, 1999)—than other youth who are homeless. These risk mechanisms would be expected to have a multiplicative (i.e., moderating) as well as cumulative impact on preexisting intrafamilial risk (Whitbeck & Hoyt, 1999). Thus, data suggesting such multiplicative effects of the experience of being homeless would support the RAM.

An alternative to the RAM would be a *direct effects* model. In this model, family violence and other intrafamilial risk factors are thought to have similar negative effects whether they precipitate homelessness or not. Although homelessness frequently follows these negative intrafamilial experiences, it is not expected to further exacerbate their associated risk. Thus, in the direct effects model, homelessness plays a less critical, "downstream" role. Similar effects of parent violence across homeless and housed adolescents (i.e., the lack of a significant interaction involving housing status and parent violence predicting youth outcomes) would be consistent with a direct effects model.

Although some evidence supporting the RAM exists, prior studies have either failed to include adolescents who are housed (e.g., McMorris et al., 2002; Whitbeck et al., 2000), or have included unmatched housed youth (Tyler, Johnson, & Brownridge, 2008). Thus, a strong test is lacking of whether risk because of parent violence is greater among youth who are homeless than among comparable housed youth. Prior research has also failed to consider links between adolescent violence and outcomes among youth who are homeless. This gap is particularly problematic given that homeless youth are more prone than their peers are to perpetrating violence, including violence toward parents (Haber & Toro, 2004). Further, the parent-adolescent violence that precipitates episodes of homelessness often occurs in a situation of mutual conflict and hostility, as opposed to only hostility of the parent toward the child (Haber & Toro, 2004; Paradise et al., 2001). Thus, violence would also be expected to be mutual in many cases. Any of the three parent-adolescent violence components discussed above—parent violence, adolescent violence, or mutual, "shared" violence—could be related to homelessness and other poor outcomes. Consequently, failing to include all three violence types would result in inadequate testing of ways in which parent-adolescent violence is related to later risk among housed and homeless youth.

Present Study

The present study examines contributions of both parent and adolescent violence in prospective prediction of later behavioral health problems—specifically, mental health symptoms and alcohol problems—among adolescents who were homeless at baseline and matched housed adolescents. Alcohol use problems were selected as an outcome because of their higher base rate in the population relative to other types of substances. Additionally, stronger links have been found between family violence experiences and later alcohol use relative to other substance use in prior research (e.g., Chermack, Stoltenberg, Fuller, & Blow, 2000). To simultaneously examine the contributions of parent and adolescent violence to prediction, the study employs two complementary analyses: (a) an exploratory factor analysis (EFA) of adolescent self-reported items measuring both parent and adolescent violence from the Revised Conflict Tactics Scale (CTS-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), designed to identify the individual and shared components of parent-adolescent violence; and (b) hierarchical multiple regression analyses using the identified shared and individual factors to predict mental health and alcohol problems at baseline, 1.5, and 4.5 year follow-ups, controlling for the impact of family environment variables shown to be related to parent-adolescent violence. Because gender and ethnicity have previously been found to moderate relationships between parent-adolescent violence and outcomes, possible moderation by these variables is also examined. Finally, the study uses a sample of adolescents who are homeless and a matched sample of housed adolescents, enabling a more rigorous test of the risk amplification model than has been employed in prior research.

Method

Participants and Sampling Design

Overall Sample

Baseline characteristics of homeless and housed samples (with the exception of matching variables) are shown in Table 1. The overall sample (i.e., including both housed and homeless adolescents) was comprised of 375 youth aged 13–17 from a large, Midwestern metropolitan area. Participants included 234 homeless and 141 housed adolescents, 245 female and 130 male adolescents, and 191 non-Latino White and 184 Black adolescents. These youth were drawn from a larger group of 398 adolescents, from which 23 were excluded because of their self-identification as belonging to ethnic groups (e.g., Latino Whites) that were poorly represented in the overall sample. Youth of poorly represented ethnic groups were excluded to permit analyses of moderation by ethnicity.

Table 1
Characteristics of Housed and Homeless Samples at Baseline

Variables	Housed sample	Homeless sample	*t*
Demographics[a]			
Socioeconomic status	0.23	−0.16	4.40**
Family environment			
Warmth	0.44	−0.26	8.65**
Monitoring	4.16	3.83	4.36**
Punitiveness	−0.39	0.22	−6.01**
Disorganization	−0.50	0.31	−8.13**
Violence			
Parent	−0.39	0.23	−6.17**
Adolescent	−0.17	0.06	−2.38*
Psychological	−0.39	0.23	−2.34*
Adverse outcomes			
General Symptom Index	1.51	1.81	−4.98**
Alcohol problems	1.15	1.97	−3.28**

[a] Gender, ethnicity, and age are not included in the table because of the fact that these were used as matching variables and therefore were approximately equal across housed and homeless samples.
* $p < .05$. ** $p < .001$.

Homeless Sample

Adolescents in the homeless sample were recruited between October 1997 and August 2000 from shelters in the five county metropolitan area, including all existing shelters in the area at the time of the outset of the study. Adolescents were sampled from each agency in approximate proportion to the percentage of the area population of sheltered youth that the agency had served in the prior year. A small number ($n = 5$) of the adolescents who were homeless were identified from other homeless settings (e.g., group homes and street settings). Before the interview, either a parent or caseworker assigned to the child (in the event a parent was not available) was contacted to provide consent for the youth's participation. Youth shelter staff were responsible for contacting and obtaining consent from youths' parents, using detailed protocols provided by the research team. Assent for participation was also obtained from the child. Only 3% of potential participants were excluded from the study because of refusal to consent by parents or other legal caregivers, and none of the youth that were approached refused assent. Almost all (89%) of the adolescents in the homeless sample were first-time shelter residents. In their current episode of shelter use, participants had a median length of stay of 7 days, with approximately three-quarters of participants (73.5%) having lengths of stay of less than 2 weeks. Only a small group (13.2%) had lengthier stays of 1 month or more. When asked to describe their reasons for being in the shelter, most youth (71.4%) cited conflict with parents. A minority (9.4%) reported that they had been abused or neglected. Other reported reasons for homelessness included involvement with juvenile or criminal justice systems (12.8%), alcohol or other substance abuse (6.0%), pregnancy (4.7%), and parent crises (e.g., mental illness or substance use related; 4.3%).

Housed Sample

Each participant in the homeless sample was matched to a housed adolescent as follows. Adolescents in the homeless group were asked to provide a list of up to 10 acquaintances of the same ethnicity, gender, and age from their most recent neighborhoods. If more than one name was provided, a housed adolescent was chosen randomly from the list. If the first adolescent from the list refused or was refused permission to participate, another participant was randomly chosen. In the few cases where a matched housed participant could not be located by this method (e.g., if only one housed individual was nominated and that person refused), a match was found by sampling directly in neighborhoods where the homeless adolescent last lived. This resulted in a housed sample of 149 matched to the homeless sample on gender, age,

racial identity, and neighborhood socioeconomic status. Parent consent and youth assent for housed youth were obtained by members of the research team. The overall refusal rate was 51% (112 from parents + 47 from adolescents) for the housed group. As shown by Table 1, characteristics of homeless and housed youth differed on all of the study variables and in the manner that would be expected based on the existing literature. Youth who were homeless at baseline were of lower socioeconomic status, were more poorly monitored by parents and received more punitive discipline before their homeless episode, had less warm and more disorganized families, had experienced more parent-adolescent violence, and had more severe behavioral health symptoms.

Procedures

Interviews were conducted by paid full-time interviewers and advanced undergraduate and graduate student volunteers. Training included instruction and practice in the administration of the measures, guidance in establishing and maintaining rapport with participants, and supervision in the field for initial interviews. Weekly meetings were held to discuss concerns that arose during the course of data collection (e.g., safety issues and maintaining rapport). For homeless participants, interviews took place in private settings at each agency. Housed participant interviews usually took place in a private area of the participants' homes. Follow-up interviews were conducted at sites that were appropriate and convenient for interviewers and participants. To locate participants for follow-up interviews, names and contact information were collected at baseline from each participant for several collateral contacts (i.e., individuals that the participants judged were likely to know where they would be in the future). These contacts were also updated at the 1.5 year follow-up interview. Baseline interviews typically required 2 to 3 hours and follow-ups took 1.5 to 2.5 hours to complete. Research participants received $20 at the conclusion of the baseline and 1.5 year follow-up interviews. At the 4.5 year follow-up, payments were increased to $50, based on the judgment that the former incentive level was insufficient for a sample that was by then 17 and older.

Measures

Demographics

Information was collected on age, gender, ethnic background, and current residence. In the case of adolescents and young adults who were homeless at baseline, the current residence was considered the last residence at which the individual was located before the baseline interview. Participants were also asked at the baseline interview for information regarding socioeconomic status of their families-of-origin, including parents' or other primary caregivers' form of employment and prior education. This information was used to derive two indicators of socioeconomic status for each parent and/or caregiver, including a Duncan Socioeconomic Index score (Duncan, 1967) and a value representing highest grade completed. Scores on the two indicators of SES were combined by averaging z-transformed scores for each value. In cases in which multiple parents were present, the parent with the higher grade and/or more highly rated occupation was used.

Parent-Adolescent Violence

Parent-adolescent violence was measured using the Revised Conflict Tactics Scales (CTS2; Straus et al., 1996). The highly similar original Conflict Tactics Scale (CTS; Straus, 1979) has been validated for use in measuring a variety of types of family violence, including violence between parents and adolescents, and has previously been used in research on adolescents experiencing homelessness (McCaskill et al., 1998). Raters are asked to estimate the number of times various specific instances of physical violence, psychological violence, and injuries have occurred in the previous year, using a Likert scale ranging from 0 ("This has never happened") to 6 ("More than 20 times in the past year"). Participants in the study were asked to assess both the frequency of their own violence toward their parents and the frequency of parents' violence toward them. The CTS2 includes Mild and Severe Physical Aggression, Physical Injury, and Psychological Aggression subscales. Collectively, these scales measure both physical and psychological aggression for each party rated. Psychological aggression measured by the scale includes both verbal violence and nonverbal acts that are typically experienced as degrading or threatening. Reliability studies of CTS2 have found test-retest coefficients ranging from the mid .7s for Psychological Aggression to the high .8s and low .9s for Physical Assault and Injury Scales.

Family Environment

Family environment characteristics were examined using scales from three instruments developed or validated for use with samples of adolescents or adults who are homeless, including the Family Environment Scale (FES; Moos & Moos, 1986), the Inventory of Childhood Events (ICE; Zozus & Zax, 1991), and the Parental Monitoring Scale (PMS; Cauce et al., 1994). From these instruments, seven subscales were identified that measured family characteristics that have been linked to the study's outcomes and that had acceptable psychometric characteristics. These included the Cohesion Scale from the FES, Parental Affection/Warmth, Punitive Parenting, & Disorganized Home factors from the ZZICE, and Parent Warmth, Parent Rejection, and Parental Monitoring Scales from the PMS. Scores for ICE factors were generated empirically through principal components extraction and varimax rotation procedures. Although Cronbach's αs of the PMS were somewhat low (ranging between .62 to .69), the scale has been found to predict substance abuse and psychological symptoms among adolescents who are homeless in prior research (Cauce et al., 1994). Among the subscales selected for the study, subscales that were both highly correlated ($r > .5$) and conceptually linked (e.g., Parental Affection/Warmth from the ZZICE, Parental Warmth from the PMS, and Cohesion from the FES) were *z*-transformed and averaged to yield one estimate for each construct across the instruments. These procedures reduced the total number of family environment variables to be included in predictive models from seven to four (i.e., Warmth, Monitoring, Punitiveness, and Disorganization).

Alcohol Problems

Adolescent and young adult alcohol problems were measured at 1.5 and 4.5 year follow-ups using the Substance Abuse Follow-

Back Interview, a measure adapted from the Diagnostic Interview Schedule for Children 2nd Edition (DISC-2.3; Fischer, Wicks, Shaffer, Piacentini, & Lapkin, 1992). The DISC is a structured instrument that has been used to obtain self-reported data on substance abuse and mental illness in large samples of children and adolescents. It yields *DSM–IV* diagnoses as well as continuous score symptom counts for several common forms of psychopathology found in children and adolescents and has demonstrated reliability and validity. Alcohol problems were quantified as the number of the 15 alcohol abuse or dependence items from the instrument that were endorsed by participants.

Mental Health Symptoms

Internalizing and externalizing mental health symptoms were measured using the General Severity Index (GSI) of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983). The BSI has been used in other studies of homeless adolescents and adults (Cauce et al., 1994; Mowbray, Solarz, Johnson, Phillips-Smith, & Combs, 1986).

Results

Identification of Violence Factors

Before performing the EFA of CTS2 data, individual items were inspected to identify outliers and violations of normality. As in prior research with this instrument, some items were rated "0" by the majority of participants, producing essentially dichotomous distributions in which only a minority reported the occurrence of the type of violence described by the item. These items included all of the items on the "Severe Assault" and "Injury" subscales of the instrument for parent and adolescent violence, as well as some of the items on the "Mild Assault" subscale for adolescent violence. Scores on these items were averaged with other highly skewed items from their subscales to create composite items (i.e., mild youth assault, severe youth assault, severe parent assault, parent injury, and severe youth injury), which were used in place of the original items in these cases. For the other, less skewed items, distributions were normalized by truncating outliers.

Principal components extraction identified four factors with eigenvalues greater than one. However, the decision was made to omit the last of these factors because of the poor loadings of items onto this factor and its lack of distinguishability from smaller possible factors as indicated by the scree plot. The remaining factors, in order of their extraction, were Parent Violence (PV), Parent-Adolescent Psychological Violence (PSYV), and Adolescent Violence (AV). These factors accounted for 37.1, 10.8, and 8.2% of the variance in scores, respectively, collectively explaining 56.7% of the total variance. Similar results were obtained using varimax and promax procedures, designed for orthogonal and correlated factors, respectively, so the varimax solution was selected for subsequent analyses to simplify interpretation and maximize power. The exact method, which includes all item weights, was used to compute factor scores from the varimax solution, which were then entered into subsequent hierarchical regression analyses.

The rotated factor pattern is displayed in Table 2. All items from the CTS2 Physical Assault and Injury scales for parent behavior loaded most highly onto the PV factor, and all CTS2 Physical Assault and Injury scale items for adolescent behavior loaded most highly onto the AV factor. Most items from the CTS2 Psychological Aggression scales for both parent and adolescent behavior loaded onto the PSYV factor.

Prediction of Outcomes

Attrition Analyses and Data Screening

Of the 375 adolescents who were homeless and housed adolescents that were included in baseline analyses, 240 participants participated at the 1.5 year follow-up interview, and 294 participated at the 4.5 year follow-up interview. Almost all ($n = 343$, or 91.47%) of the participants in the baseline sample were available for at least one follow-up interview with the majority of these ($n = 191$, or 50.93%) available at both follow-up points. Sample attrition at follow-up was usually because of either failure to locate the adolescent or, in a smaller number of cases, adolescent refusal to continue in the study. A few of the adolescents who did not participate at follow-up were unavailable because of incarceration or death. Attrition analyses comparing baseline and follow-up samples on study variables showed differences at below the rate of chance (i.e., fewer than one in 20 variables differed between baseline and follow-up samples). Before regression analyses, distributions for all study variables were inspected to identify univariate and multivariate outliers as well as violations of normality. All univariate outliers ($z = 2.96$ or above) were examined to ensure accuracy and then truncated. Multivariate outlier cases were removed. Continuous predictors were centered to minimize collinearity and maximize interpretability of interactions. Tolerance was within acceptable limits for all variables in all models.

Preliminary Regression Analyses

For all models, alpha was set at .05. To reduce the number of interaction terms to be tested, preliminary models were estimated for general symptoms and for alcohol problems at 1.5 and 4.5 year follow-ups. Each preliminary model consisted of all hierarchical regression steps before entry of interaction terms (see Final Models, below), and then, in the final step, interactions of one of the three identified violence factors with each of the three moderator variables, such that three interaction terms were tested per preliminary model. Only interactions identified as significant in these preliminary models were used in the final models.

Final Models

For each of the final models—two predicting the GSI and two predicting alcohol problems at 1.5 and 4.5 years from baseline, respectively—variables were entered in six steps. To control for variation in follow-up times among adolescents and young adults at each time point, time in days from baseline was entered in the first step. In the second step, either the GSI score at baseline or the number of alcohol problems were entered, to permit examination of the relationship of remaining predictor variables to residualized change in symptoms and alcohol problems. Background variables were entered in step 3, family environment variables were entered in step 4, and violence variables were entered in step 5. Finally, any interactions between violence variables and background vari-

Table 2
Principal Components Analysis of Conflict Tactics Scales (CTS2) Parent Violence (PV), Parent-Adolescent Psychological Violence (PSYV), and Adolescent Violence (AV) Items

Original CTS2 item(s)	Description	*M*	*SD*	PV	PSYV	AV
8	Caregiver threw something[a]	0.51	1.12	.727	.178	.172
10	Caregiver twisted my arm[a]	0.47	1.06	.752	.145	.148
11	I had a sprain, bruise[a]	0.50	1.07	.771	.117	.287
18	Caregiver pushed me	1.14	1.76	.810	.226	.166
26	Caregiver called me fat, ugly	0.67	1.45	.509	.304	.119
28	Hit me with something[a]	0.54	1.18	.813	.069	.178
30	Caregiver destroyed something	0.90	1.54	.630	.327	.053
38	Slammed me against wall[a]	0.61	1.19	.843	.123	.128
46	Caregiver grabbed me	1.08	1.78	.780	.250	.129
54	Caregiver slapped me	1.12	1.78	.735	.238	.021
70	Caregiver threatened to throw	1.14	1.79	.606	.423	.094
71	Felt pain the next day[a]	0.53	1.10	.755	.091	.202
18,30,40,52,60	Severe parent violence[b]	0.13	0.26	.780	−.010	.264
19,27,37,47	Severe youth injury[c]	0.03	0.12	.536	.013	.282
5	I insulted or swore	1.75	2.16	.004	.632	.398
6	Caregiver insulted or swore	2.58	2.38	.380	.631	.114
29	I destroyed something	0.89	1.47	.277	.378	.305
35	I yelled at caregiver	3.10	2.35	.112	.755	.214
36	Caregiver yelled at me	3.97	2.22	.284	.719	−.044
49	I stomped out of the room	2.75	2.21	.130	.658	.118
50	Caregiver stomped out	1.09	1.80	.078	.573	.145
67	I did something to spite	1.86	2.13	.048	.706	.150
68	Did something to spite me	1.12	1.79	.225	.663	.042
17	I pushed my caregiver[d]	0.51	1.11	.216	.201	.786
25	I called caregiver fat, ugly	0.67	1.56	.233	.339	.382
45	I grabbed caregiver[e]	0.27	0.69	.280	.131	.693
69	I threatened to hit or throw	0.55	1.29	.116	.361	.679
7,9,53	Mild youth violence[f]	0.10	0.27	.114	.091	.800
21,27,33,37,43,61,73	Severe youth violence[g]	0.05	0.11	.186	.107	.812
12,72,24,32,42,56	Parent injury[h]	0.04	0.10	.201	.015	.668

[a] Distribution truncated at 4. [b] CTS2 items averaged then truncated at 0.80. [c] CTS2 items averaged then truncated at 0.50. [d] Distribution truncated at 5. [e] Distribution truncated at 3. [f] CTS2 items averaged then truncated at 1.00. [g] CTS2 items averaged then truncated at 0.43. [h] CTS2 items averaged then truncated at 0.

ables that were significant in the preliminary analyses were entered in step 6. Results for models are depicted in Table 3. Simple effects associated with any significant interaction terms were analyzed in accordance with procedures outlined in Aiken and West (1991).

Results: Regressions Predicting Change from Baseline to 1.5 Years

Once background variables were controlled, family environment variables as a group predicted significant change from baseline to 1.5 years on the GSI ($\Delta R^2 = .033$, *F*-change (4, 224) = 2.671, $p < .05$), but not for alcohol symptoms ($\Delta R^2 = .023$, *F*-change (4, 227) = 1.747, *ns*). Of the family environment variables predicting change in the GSI from baseline to 1.5 years, only parental monitoring was uniquely related to symptom severity (i.e., increased parental monitoring predicted decreased symptom severity, $B = -.19$, $t = -2.951$, $p < .01$).

Controlling for family environment variables, violence factors and their interactions with background variables predicted change in both the GSI and alcohol problems scores over the baseline to 1.5 year time period (for main effects of parent-adolescent violence predicting the GSI and alcohol problems, $\Delta R^2 = .031$, *F*-change (3, 221) = 3.442, $p < .05$; and $\Delta R^2 = .051$, *F*- change (3, 224) = 5.546, $p < .01$, respectively; for interactions between parent-adolescent violence and demographic variables predicting the GSI and alcohol problems, $\Delta R^2 = .049$, *F*-change (4, 217) = 4.414, $p < .01$; and $\Delta R^2 = .022$, *F*-change (1, 223) = 7.366, $p < .01$, respectively). The specific relationships involving family violence variables and their interactions differed across the two outcomes, however. In the model predicting increases in the GSI from baseline to 1.5 years, interactions showed that violence-outcome links were limited to certain subgroups. Specifically, as shown in Figure 1, an interaction involving housing and parent violence ($B = -.374$, $t = -2.280$; $p < .05$) showed that the longitudinal effects of parent violence on the GSI were limited to the housed group. As shown in the upper panel of Figure 2, Interactions involving ethnicity and adolescent violence ($B = .137$, $t = 2.002$, $p < .05$) and ethnicity and psychological violence ($B = .149$, $t = 2.024$, $p < .05$) showed that adolescent and psychological violence were linked to the GSI only among Black youth (see Figure 2). In the model predicting change in alcohol problems from baseline to 1.5 years, main effects were shown for both parent violence ($B = .253$, $t = 3.732$, $p < .001$), and psychological violence ($B = .142$, $t = 1.983$, $p < .05$), but the effect of adolescent violence was moderated by gender ($B = -.253$, $t = -2.714$, $p < .01$), such that the link between

Table 3
Prospective Regressions on General Symptoms and Alcohol Problems

	General Severity Index scores				Alcohol problems scores			
	1.5 Years		4.5 Years		1.5 Years		4.5 Years	
Variable	B	Δ*R*2	B	Δ*R*2	B	Δ*R*2	B	Δ*R*2
Step 1: Time	−.03	.00	.18**	.03**	.12†	.01†	.10†	.01†
Step 2: Baseline symptoms	.51**	.27**	.30**	.09**	.40**	.16**	.29**	.08**
Step 3: Demographics		.02		.04*		.06**		.13**
Sex	−.02		−.10†		−.11†		−.26**	
Age	.01		.02		.07		−.06	
Socioeconomic status	−.05		.04		.01		.11*	
Ethnicity	−.02		.07		−.24**		−.21**	
Housing status	.11†		.20**		.04		.04	
Step 4: Family environment		.03*		.01		.02		.01
Warmth	.14†		.12†		−.07		−.02	
Monitoring	−.19**		−.08		−.09		−.09	
Punitiveness	.02		−.03		.07		.04	
Disorganization	.04		.03		.09		.01	
Step 5: Violence		.03*		.02		.05**		.01
Parent	.01		.01		.25**		.07	
Adolescent	.19**		.15*		.11†		.10†	
Psychological	.06		.04		.14*		.11	
Step 6: Interaction terms		.05**		.01*		.02**		.05**
Ethnicity × adolescent	.14*							
Ethnicity × psychological	.15*		.16*					
Housing × parent	−.37*							
Gender × parent							−.26**	
Gender × adolescent					−.25**			
Gender × psychological							−.31**	

† $p < .10$. * $p < .05$. ** $p < .01$.

adolescent violence and alcohol-related outcomes at the 1.5 year follow-up was limited to males, as shown in the lower panel of Figure 2.

Results: Regressions Predicting Change from Baseline to 4.5 Years

Controlling for background variables, family environment variables did not predict either change in the GSI or the alcohol problems outcomes over 4.5 years (for effects of family environment variables on GSI change at 4.5 follow-up, $\Delta R^2 = .013$, *F*-change (4, 271) = 1.101, *ns*; for effects of family environment on alcohol problems at 4.5 follow-up, $\Delta R^2 = .009$, *F*-change (4, 276) = .771, *ns*). From baseline to 4.5 years, main effects of parent-adolescent violence variables also failed to contribute to predicting increases in the GSI ($\Delta R^2 = .017$, *F*-change (3, 268) = 1.846, *ns*) or increases in alcohol problems ($\Delta R^2 = .014$, *F*-change (2, 273) = 1.725, *ns*). Steps containing interaction terms in each of the GSI and alcohol problems models, however, were significant (i.e., for increases in the GSI, $\Delta R^2 = .013$, *F*-change (1, 267) = 4.500, $p < .05$; for increases in alcohol problems, $\Delta R^2 = .051$, *F*-change (2, 271) = 9.581, $p < .001$). As had been the case in the model predicting GSI change from baseline to 1.5 year follow-up, a significant interaction of ethnicity and psychological violence ($B = .162$, $t = 2.121$, $p < .05$) showed that psychological violence was only linked to increased GSI scores among Blacks. As had been the case in the model for change in alcohol problems from baseline to 1.5 year follow-up, the model predicting alcohol problem change at 4.5 years showed interactions of violence variables and gender, though different violence variables were involved; specifically, rather than the interaction of gender and adolescent violence shown at 1.5 years, the interactions shown included an interaction involving gender and parent violence ($B = -.263$, $t = -3.203$, $p < .05$) and an interaction involving gender and psychological violence ($B = -.307$, $t = -3.125$, $p < .05$). Figure 2 shows that simple effects were limited to males, as was

Figure 1. Interactions of violence with housing at 1.5 year follow-up.

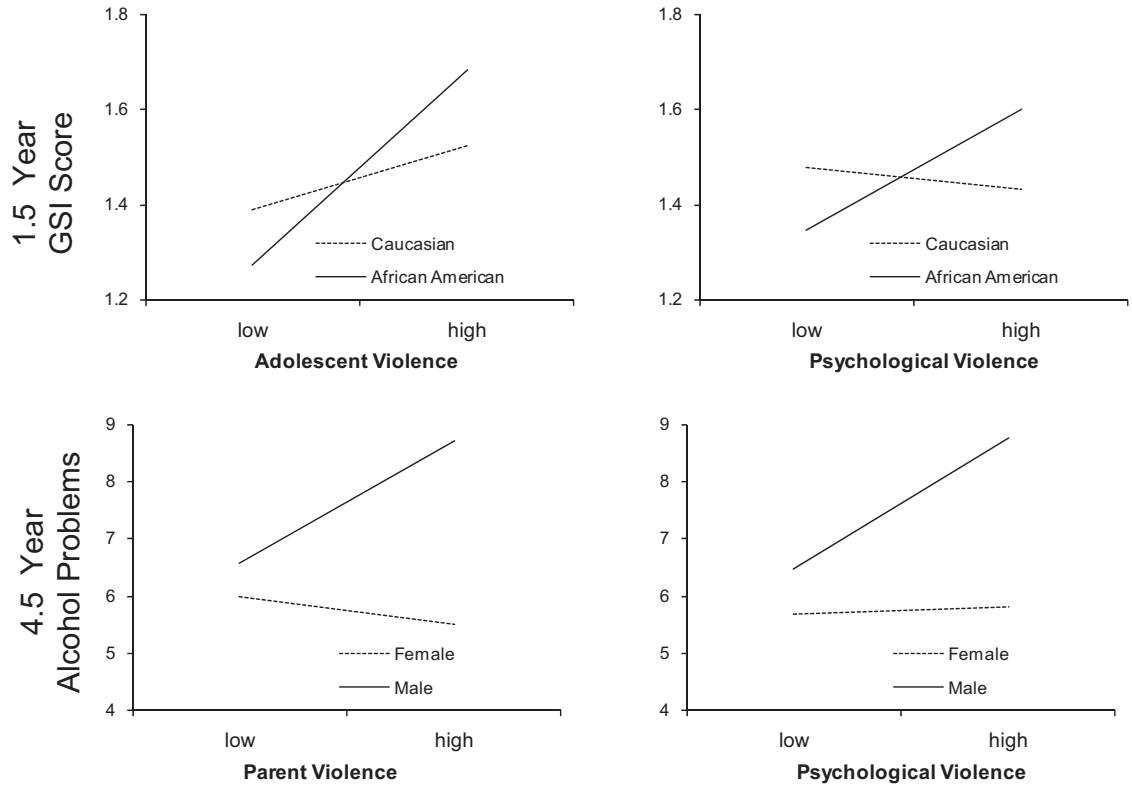

Figure 2. Interactions of violence with gender and ethnicity at 1.5 and 4.5 year follow-ups.

the case with interactions in the baseline to 1.5 year follow up model.

Discussion

The present study examined relationships of parent and adolescent violence to the later development of mental health and alcohol use problems among adolescents who are homeless and among matched housed youth. Analyses addressed gaps in the research on family violence among adolescents who are homeless and family violence among adolescents more generally. In almost all cases, prior studies have examined only parent violence and not adolescent violence. In addition, this study was the first attempt to examine whether adolescents who are homeless show unique risks from parent-adolescent violence, as would be suggested by the risk amplification model (Whitbeck et al., 1999). For these purposes, the study included two sets of complementary analyses: (a) determination, through EFA of whether parent and adolescent violence should be summarized separately, with violent acts segregated into one or more intraindividual factors for each partner, or alternatively, with combined factors representing behaviors of both; (b) use of EFA factors to predict later poor outcomes at 1.5 and 4.5 years from baseline.

Overall Implications of EFA and Prediction Analyses

EFA results indicated that whether reports of violence conform to intraindividual or shared factors depends on the type of violence. Whereas parent and adolescent physical violence emerged as separate, discriminable components (i.e., PV and AV), parent and adolescent psychological violence were so closely linked that items conformed to the same factor—PSYV. Results of predictive analyses indicated that as a group, the main effects of these three factors predicted both mental health symptoms and alcohol use problems at 1.5 year follow-up. Although main effects of violence factors were not significant at 4.5 year follow-up, significant interaction terms showed that violence factors were predictive for certain demographic subgroups. Specifically, among Black youth, PSYV predicted general mental health symptoms, and among males, both PV and PSYV predicted later alcohol problems. Despite the conservative design, such that baseline levels of the outcome indicators and baseline parenting and family violence characteristics were controlled, the findings summarized above still accounted for between 5% and 8% of the variance in three of the four regression equations. Had parent-adolescent violence been measured as a unidirectional phenomenon, the study would have found more limited relationships between violence and outcomes, because violence of both parents and adolescents contributed to prediction. In addition, because PV, AV, and PSYV factors were orthogonally derived, results provided purer estimates of prediction by each factor. These findings suggest that measuring both parent and adolescent violence is necessary to accurately appreciate the extent and nature of links between parent-adolescent violence and outcomes.

In addition to showing their unique contributions, the inclusion of PV, AV, and PSYV factors also provided an opportunity to observe specific patterns of risk associated with the three types of

violence represented. For either the complete sample or certain subgroups, all three of the parent-adolescent factors predicted general symptoms and alcohol problem outcomes at 1.5 years following baseline. However, at the 4.5 year follow-up, only PSYV predicted both of these outcomes (i.e., for the sample as a whole or for specific subgroups). This result was consistent with prior findings indicating that psychological violence is sometimes more predictive of poor outcomes than physical violence (e.g., Vissing et al., 1991). At the 4.5 year follow-up, AV predicted change in general symptoms, but did not predict change in substance use problems. Thus, although other types of youth violence have been associated with later substance use in prior studies (e.g., White et al., 1999), present data indicated that youth violence toward parents failed to predict their subsequent alcohol problems. Conversely, although parent violence toward adolescents predicted increased alcohol problems at the 4.5 year follow-up, it did not predict increased general symptoms at this time point, despite findings of some prior research that parent violence toward adolescent youth may be associated with greater risk for later psychological symptoms (e.g., Brown, Cohen, Johnson, & Smailes, 1999). This discrepancy from prior studies may have resulted from the use of a parent violence factor that was orthogonally derived from items assessing both parent and adolescent violence. In effect, this procedure controlled covariance between parent and adolescent violence not detected in prior studies that failed to measure adolescent violence.

Implications of Interactions Involving Violence Factors and Demographic Variables

The complex and sometimes unexpected patterns of interactions between parent-adolescent violence and demographic variables suggest important considerations for future research. For general symptoms, parent violence was predictive among youth who were housed but not among the youth who were homeless at the 1.5 year follow-up point. This was an unexpected finding, given that the opposite pattern would be predicted by the risk amplification model. A possible explanation for the absence of the risk amplification pattern might be the nature of the sample, which was derived entirely from shelters, and consisted mostly of youth experiencing their first episode of homelessness. Adolescents sampled from shelters or lacking prior histories of homelessness tend to have had fewer traumatic experiences, which are a key mechanism through which risk amplification is thought to occur (Haber & Toro, 2004).

Although differences between adolescents in shelters and other adolescents who are homeless would explain the absence of risk amplification in the homeless group, they do not explain the relatively greater effect seen among adolescents who were housed. A possible contributor to this finding might have been attenuation in the homeless group, because of their higher levels of parent violence. This "saturation effect" is a common phenomenon in group comparisons of risk related to characteristics that are more prevalent in one group than the other (e.g., Widom, Ireland, & Glynn, 1995). In the case of the current study, a saturation effect would suggest that: (a) as a group, homeless youth are already at higher risk for poor outcomes because of their higher levels of parent violence; and (b) a single episode of homelessness may not be sufficient to heighten risk beyond this already elevated level.

Interactions involving ethnicity were also found. Specifically, youth participation in parent-adolescent violence, as reflected by higher scores on AV and PSYV factors, predicted increased symptoms among Black but not White youth. This pattern was anticipated in light of research indicating the importance of relatively restrictive or authoritarian parenting approaches as a protective factor in Black families (Gonzales et al., 1996; Steinberg et al., 1994). Adolescent violence would be expected to undermine such parenting styles, given that it represents a direct challenge to parental control. As this is the first study to examine ethnic differences in how adolescent violence toward parents is associated with adverse outcomes among youth, additional research is needed to explore the generalizability of this moderation effect to other samples and the specific mechanisms underlying this effect (e.g., the extent to which adolescent violence precipitates deterioration in the parent-adolescent relationship in Black families, rather than reflecting deterioration because of other causes).

The last type of interaction that was detected involved prediction of increased risk of later alcohol problems by gender and violence factors. Examination of the simple effects contributing to gender by violence interactions indicated that only males suffered increased risk of subsequent alcohol problems because of adolescent violence at 1.5 year follow up, and because of parent violence and psychological violence at the 4.5 year follow up. Thus, males showed greater increases than females in risk from violence at multiple time points over a prolonged period. Although this finding contradicts prior research showing stronger links among women between violence and the etiology of alcohol and other substance use (National Center on Addiction and Substance Abuse at Columbia University, 2006), few of these studies have compared violence-related risk of males and females in a prospective design, and no prior studies have compared violence-related risk by gender in a sample of adolescents who are homeless. A saturation effect may play a role in explaining the lack of increased risk as a function of parent-adolescent violence among females, since endorsement of parent-adolescent violence items was more common among females than males in this sample (Haber & Toro, 2003).

Limitations and Future Directions

One limitation of the study was its reliance on single informant (i.e., adolescent self-report) measurement of parent-adolescent violence. Multi-informant reporting and suitable methods for analyses of these data (e.g., latent growth curve modeling) would have provided more robust estimates of effects. The absence of these features in the present study reduces confidence to some extent in the replicability of its findings. Multi-informant reporting has also been recommended in family violence literature to capture differences in perspective and reduce monomethod bias (Widom, 1989).

Conversely, single informant reporting has been criticized as yielding inflated estimates of family violence effects (Sternberg, Lamb, Guterman, & Abbott, 2006). However, this criticism has also been made regarding other types of correlational research, including research on effects of parenting and family environment (e.g., Sweeting, 2001), factors that were not shown to be predictive of behavioral health outcomes in the present study. Had single informant reporting inflated bias in our research to a substantial degree, one might expect such relationships to have been found.

Further, the likelihood of bias in the study was reduced by the use of multiple time points of measurement and the length of time between the measurement of predictor and outcome variables. Given the nature of the sample, obtaining parent report would have been extremely difficult in many cases and likely would have increased attrition, which was considered an unacceptable cost. However, the potential for distortion of findings because of reasons indicated above must be acknowledged.

Other methodological limitations included the sample size ($N = 375$) and the substantial amount of attrition at 1.5 and 4.5 year follow-up points. Although the sample was relatively large for a study on youth homelessness, a larger sample would have been desirable to increase the stability of the factor solution and replicability of the regression results. The proportion of participants interviewed at follow-up time points was also quite respectable given the nature of the sample, and attrition analyses failed to demonstrate significant or interpretable differences between homeless and housed samples. Nonetheless, different results might have been achieved had follow-up rates been higher.

A further limitation of the study was that it provided little insight into the distinct ways in which parent and adolescent violence might be linked to outcomes for youth who are homeless relative to housed youth. In particular, the risk amplification model was not supported. A possible basis for the lack of a risk amplification effect would be the predominance in the sample of youth in shelters who were experiencing their first episode of homelessness. Prior studies suggest other types of samples of youth who are homeless (e.g., higher numbers of individuals over 18 with more chronic homelessness histories or higher numbers of youth sampled from settings other than shelters) might have yielded different findings (e.g., Whitbeck, Hoyt, & Ackley, 1997). Note, however, that single episodes in shelters are a highly common pattern of homelessness among adolescents, one thought to be shared by a large proportion of youth who are homeless in service settings (Haber & Toro, 2004). The present study's probability sampling design provides further assurance that its sample, if not representative of youth who were homeless overall, is at least representative of the population of youth in homeless shelters in the metropolitan area examined. Thus, findings may be particularly informative for providers of youth shelter and associated other services (see Significance of Findings for Intervention, below). However, because other types of youth who are homeless were largely lacking, additional research is needed to better understand their patterns of risk because of parent-adolescent violence and related needs. Additional research is also needed to better describe the relative prevalence of different patterns of homeless youth and how these may differ across cities or time periods based on variations in the economy, policies that affect the prevalence of street youth (e.g., the extent to which these youth are detained by local police), or other factors. The limited research to date on this topic suggests that such variations may be important in understanding developmental trajectories of youth who are homeless (Toro, Dworsky, & Fowler, 2007).

Significance of Findings for Intervention

Regardless of their particular paths to homelessness or the settings in which they are encountered, adolescents who are homeless share in common a high likelihood of histories of parent-adolescent violence (Haber & Toro, 2004; Maclean, Embry, & Cauce, 1999). These histories increase the likelihood of future homelessness and other poor outcomes often found among adolescents who are homeless such as mental health symptoms and alcohol abuse (Johnson, Whitbeck, & Hoyt, 2005; Whitbeck et al., 1997). The bidirectional view of parent-adolescent violence supported by the present study suggests that family systems approaches may hold particular promise in addressing parent-adolescent violence. Family systems approaches hold that individuals within a family cannot be understood in isolation from one another, but rather as part of their family. Behaviors of family members are understood as being closely linked and interdependent, to such an extent that they are often better described at the relationship or system level (Nichols & Schwartz, 2005). In the context of assessment and treatment of family violence, systemic assessment and intervention approaches seek to address how each member of the violent relationship contributes to violence, both singly and through reciprocal influence (O'Leary & Murphy, 1999; Straus & Gelles, 1988). This perspective contrasts with psychopathology and patriarchy theories, which identify a single individual as the "abuser" and focus treatment on modification of that individual's behavior or underlying psychological problems (Wallace, 2005). Although often applied to understanding intimate partner violence, variants of these theories have been applied to understanding multiple forms of violence in families including parent violence against youth (Appel & Holden, 1998; Cicchetti & Toth, 1995).

Because both parent and adolescent components of violence were risks for poor outcomes in this study, results highlight the need to approach parent-adolescent violence in a systemic manner among adolescents who are homeless or at risk for homelessness. Further, results indicating that psychological violence was best measured as a dyadic phenomenon suggest that a systemic approach would be even more important where psychological violence is concerned. Black adolescents appear to be at greatest risk of poor outcomes because of psychological violence, so systemic approaches (i.e., that consider the psychologically violent behaviors of both parents and youth and how they influence one another) might be particularly useful for this subpopulation, if delivered in a culturally competent manner (Hernandez & Isaacs, 1998). Though not predicted and consequently tentative, the finding that parent-adolescent violence was more strongly linked to poor outcomes among adolescent males suggests that systemic approaches would have at least as much utility for this group as for females.

Youth shelters that receive federal funding are mandated to offer a range of supportive services in addition to housing, including services to support family reunification (Slesnick, 2004). Given its close association with episodes of youth homelessness, assessing and responding to parent-adolescent violence would seem to be an essential component of shelters' reunification mission. What does a systemic approach to assessing and responding to family violence in this context entail? First, providers need to assess the extent of adolescent and shared parent-adolescent psychological violence as well as parent violence. In some cases, violence may occur in a more asymmetric pattern in which adolescents do not participate in violence or parent violence is relatively severe and injurious. In these cases, efforts to help adolescents find alternative living situations may be warranted. In other cases where adolescent and shared violence are also present, interventions addressing

the family system dynamics leading to violence would be more useful. A possible approach would involve helping adolescents and parents identify problematic patterns of interaction and alternative communication strategies, in a similar manner to behavioral couples' therapies (e.g., Gottman, 1999). Systemic family intervention strategies have been promising in reducing problem behavior such as alcohol and other substance abuse, particularly when accompanied by attention to other interpersonal systems (e.g., peer networks, extended family) and settings (e.g., school) in adolescents' lives (Slesnick & Prestopnik, 2005). An explicit focus on violence reduction and creating alternatives for managing conflict could bolster these interventions where parent adolescent violence is identified. As suggested by findings related to the Black subgroup in the current sample, cultural sensitivity should be used in developing and applying these interventions. In particular, it is important to pay attention to cultural differences in the prevalence and implications of authoritarian parenting. Further research on differences in how parent-adolescent violence is linked to outcomes among male versus female adolescents might identify implications for tailoring of family system interventions to gender as well.

Although most youth who were homeless in the present study were experiencing their first episode of homelessness, these youth still showed higher levels of all three components of parent-adolescent violence than the housed group. Moreover, a lack of support for the risk amplification model in the study indicates that homeless episodes failed to increase risk because of parent-adolescent violence, despite their bivariate association with mental health and alcohol use outcomes. These findings suggest the need to develop preventive strategies targeting youth before their initial episodes of homelessness, perhaps focused on youth younger than age 13 (because of youth typically begin to experience episodes of homelessness on their own at this age or older). These strategies could focus on risk factors that homelessness and other negative outcomes have been shown to share in common in prior research, including parent-adolescent violence and other features of family environment such as those examined in the current study (e.g., parental monitoring and warmth, family cohesion). For example, strategic or structural interventions to address family system dynamics underlying violence, poor monitoring, low cohesion, and so forth have been suggested (e.g., ecologically based family therapy; Slesnick & Prestopnik, 2005), though the effectiveness of these approaches for preventing runaway behavior has yet to be empirically demonstrated. At the level of the community, homelessness, violence, and adverse behavioral health outcomes all appear to be associated with a variety of common factors, including the availability of low-income housing, as well as forms of economic, social, and human capital (Hagan, McCarthy, Parket, & Climenhage, 1997). Comprehensive community initiatives (e.g., initiatives associated with the healthy cities and healthy communities movement; Wolff, 2003) show promise as a means of addressing these common factors of poor outcomes on a community level. However, preventive strategies are still infrequently examined relative to interventions for youths who have already begun to experience homelessness, and additional data in this area are needed (Haber & Toro, 2004). In tandem with the further development of this knowledge base, researchers, providers, and policymakers should attend to ways in which prevention of youth homelessness might be incorporated in broader programs targeting a wider range of outcomes.

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